

**GILA RIVER BASIN**

**09510000 VERDE RIVER BELOW BARTLETT DAM, AZ**

**LOCATION**--Lat 33°48'30", long 111°39'46", in NW<sub>1/4</sub> sec. 5, T.5 N., R.7 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 2.1 mi downstream from Bartlett Dam, 4.0 mi upstream from Camp Creek, and 16 mi east of town of Cave Creek.

**DRAINAGE AREA**--6,161 mi<sup>2</sup>, of which 365 mi<sup>2</sup> is noncontributing, including 357 mi<sup>2</sup> in Aubrey Valley Playa, a closed basin.

**WATER-DISCHARGE RECORDS**

**PERIOD OF RECORD**--Aug. 1888 to current year. (Monthly discharge only Aug. 1888 to Dec. 1903, and Jan. 1910 to Sept. 1913. For some periods prior to Dec. 1903 gage heights, discharge measurements, and daily discharge hydrographs are published in reports of the Geological Survey.) Prior to Oct. 1941, published under different names as follows: "near Fort McDowell," "at mouth," "above Salt River," "at McDowell," "at McDowell near Lehi," "near McDowell," and "above Camp Creek, near McDowell."

**REVISED RECORDS**--WSP 1049: 1893, 1913–14, 1917–18, 1926–27, 1929. WSP 1213: 1915–16. WDR AZ-89-1: Drainage area.

**GAGE**--Water-stage recorder. Datum of gage is 1,570.34 ft above sea level. Gage at present site and datum 2.00 ft higher Jan. 1, 1942, to Sept. 30, 1961, Dec. 30, 1965, to Mar. 10, 1971, and Oct. 1, 1978, to Jan. 4, 1993; Mar. 2 to Sept. 30, 1978, used as supplementary gage, and Feb. 18, 1975, to Feb. 28, 1978, supplementary water-stage recorder at site 30 ft upstream at same datum. Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973, water-stage recorder at site 1.9 mi upstream at datum 1,600 ft, from topographic map; at same site at datum 4.00 ft higher, Oct. 1, 1973, to Mar. 3, 1975, and 5.00 ft higher, Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973. Feb. 17, 1925, to Dec. 31, 1941, water-stage recorder at two sites within 0.5 mi upstream from Camp Creek, at various datums. Prior to Feb. 17, 1925, nonrecording gages at several sites about 20 mi downstream from present location at various datums.

**REMARKS**--Records good. No estimated daily discharges. About 12,500 acres above station are irrigated by surface water and ground water. Flow completely regulated by Bartlett Reservoir since Feb. 5, 1939, and Horseshoe Reservoir since Nov. 15, 1945, except during periods of spill. Water diverted downstream for municipal supply for the city of Phoenix, and for irrigation in Fort McDowell Indian Reservation. Remainder (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam on Salt River 27 mi downstream for irrigation in Salt River Valley, and for municipal use by the city of Phoenix.

**AVERAGE DISCHARGE** (adjusted for storage in Bartlett and Horseshoe Reservoirs)--116 years, 657 ft<sup>3</sup>/s, 476,000 acre-ft/yr; median of yearly mean discharge, 520 ft<sup>3</sup>/s, 377,000 acre-ft/yr.

**EXTREMES FOR PERIOD OF RECORD**--1888–1939: Maximum discharge not determined, probably over 150,000 ft<sup>3</sup>/s Feb. 24, 1891; minimum daily, 29 ft<sup>3</sup>/s July 11 and 13, 1901. Floods of Nov. 27, 1905 and Mar. 4, 1938, reached maximum discharges of 96,000 ft<sup>3</sup>/s and 95,000 ft<sup>3</sup>/s, respectively.

1939–2000: Maximum discharge, 110,000 ft<sup>3</sup>/s Jan. 8, 1993; no flow at Bartlett Dam at times when gates in dam were closed.

**EXTREMES FOR CURRENT YEAR**--Maximum daily discharge, 600 ft<sup>3</sup>/s Oct. 15. Minimum daily discharge, 80 ft<sup>3</sup>/s Aug. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	434	387	178	161	155	331	475	100	106	94	103
2	294	387	386	179	171	119	297	460	99	104	118	102
3	299	344	386	178	159	97	118	418	113	103	118	98
4	210	341	428	136	202	126	168	209	113	107	118	84
5	190	337	394	143	227	99	179	117	113	114	110	82
6	214	325	363	200	235	96	182	118	114	113	101	94
7	328	348	322	285	222	95	226	114	114	113	90	97
8	500	347	277	226	222	95	266	96	114	114	93	112
9	556	349	270	166	224	95	190	106	115	107	97	97
10	508	314	259	145	236	104	150	119	109	109	95	96
11	374	272	250	115	249	119	172	119	98	97	93	85
12	328	226	217	96	294	93	215	119	90	107	102	90
13	358	201	200	114	330	94	180	120	92	114	99	101
14	429	200	193	116	304	94	168	119	100	116	81	109
15	600	182	192	95	284	107	144	107	96	112	90	107
16	582	154	190	91	284	93	203	98	95	104	94	101
17	532	163	164	90	289	92	249	116	117	92	100	101
18	476	173	140	162	318	92	243	106	117	104	95	98
19	473	136	106	239	365	93	215	89	97	111	88	90
20	505	195	108	204	365	93	183	110	100	100	90	85
21	505	327	109	171	346	93	254	112	116	96	80	87
22	518	362	112	147	328	103	366	95	116	100	82	89
23	564	366	118	141	161	94	459	99	102	105	91	100
24	586	329	130	149	119	102	325	111	104	103	89	99
25	511	293	130	141	227	122	374	98	103	99	106	88
26	441	260	120	134	230	176	426	90	93	105	104	91
27	466	240	111	143	233	176	592	102	101	110	98	114
28	533	241	111	171	232	127	517	108	114	103	83	92
29	539	267	112	202	185	133	441	93	115	106	92	85
30	537	353	113	202	---	221	471	95	101	115	101	88
31	457	---	132	181	---	268	---	100	---	97	102	---
TOTAL	13599	8466	6530	4940	7202	3666	8304	4438	3171	3272	2995	2865
MEAN	439	282	211	159	248	118	277	143	106	106	96.6	95.5
MAX	600	434	428	285	365	268	592	475	117	116	118	114
MIN	186	136	106	90	119	92	118	89	90	92	80	82
AC-FT	26970	16790	12950	9800	14290	7270	16470	8800	6290	6490	5940	5680

CAL YR 2003 TOTAL 111247 MEAN 305 MAX 801 MIN 79 AC-FT 220700  
WTR YR 2004 TOTAL 69448 MEAN 190 MAX 600 MIN 80 AC-FT 137800

## GILA RIVER BASIN

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## 09510000 VERDE RIVER BELOW BARTLETT DAM, AZ—CONTINUED

## WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Dec. 1950 to Aug. 1992, June 1999 to current year.**PERIOD OF DAILY RECORD.**--**SPECIFIC CONDUCTANCE:** Oct. 1964 to Dec. 1981, Mar. 1982 to Sept. 1982, Apr. 1983 to Sept. 1990.**WATER TEMPERATURE:** Dec. 1950 to Dec. 1981, Mar. 1982 to Sept. 1982, Apr. 1983 to Sept. 1990.**REMARKS.**--Unpublished daily specific conductance measurements for period Dec. 1950 to Sept. 1964 available from District Office in Tucson, AZ.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Turbid- ity,				Baro- metric pres- sure,	Dis- solved oxygen, mg/L	Dis- solved percent of sat- uration	pH	Specif. conduc- tance, us/cm	Temper- ature, deg C	Temper- ature, deg C	Noncarb- hard- ness, water, field,		
		Instan- taneous dis- charge, cfs	wat unf lab,	Hach 2100AN	Tur- bidity, NTU								wat unf air, us/cm (00095)	water, deg C (00020)	mg/L as CaCO <sub>3</sub> (00904)
OCT 23...	1045	547	--	1.9	720	10.1	115	8.0	397	31.0	18.9	--	160		
MAR 25...	0927	104	--	7.2	719	17.5	171	8.4	579	25.0	11.7	4	220		
MAY 12...	1035	121	--	4.2	716	10.8	110	8.2	543	31.0	13.3	2	220		
AUG 18...	1030	104	3.0	--	719	7.8	88	8.1	437	34.0	18.2	97	240		
Date		Calcium water				Magnes- ium, water				Alka- linity, wat flt				Bicar- bonate, wat flt	
		Calcium water, unfltrd filterd, able, mg/L (00915)	Magnes- ium, water, unfltrd recover able, mg/L (00925)	Hach 2100AN NTU (00076)	Tur- bidity, NTU (00025)	Potas- sium, water, unfltrd recover able, mg/L (00927)	Sodium adsorp- tion ratio (00935)	Sodium water, unfltrd filterd, mg/L (00930)	Sodium water, inc tit ratio (00931)	Wat flt	Wat flt	Wat flt	Wat flt	Chlor- ide, water, filterd, mg/L (00940)	Fluor- ide, water, filterd, mg/L (00950)
OCT 23...	35.0	37.0	18.0	19.0	2.40	.7	19.0	168	199	3	13.0	.2	23.0		
MAR 25...	41.0	41.0	29.0	28.0	3.30	1	36.0	217	261	2	23.0	.3	54.0		
MAY 12...	41.0	41.0	29.0	28.0	3.00	1	36.0	220	254	7	23.0	.3	54.0		
AUG 18...	45.2c	43.5	30.8c	31.4	3.06c	1	35.8c	143	168	3	23.3	.4	51.2		
Date		Residue water, fltrd		Residue on total		Residue + at deg. C,		Ammonia org-N, water, unfltrd		Nitrite + nitrate, water, unfltrd		Nitrite + nitrate, water, unfltrd		Organic nitro- gen, water, unfltrd	
		sum of consti- tuents/ tons/	water, fltrd	180degC	wat flt	sus- pended, mg/L (00530)	mg/L as N (00625)	Ammonia water, unfltrd filterd, mg/L as N (00608)	Ammonia water, unfltrd filterd, mg/L as N (71845)	Ammonia water, unfltrd filterd, mg/L as N (00610)	Ammonia water, unfltrd filterd, mg/L as N (00631)	Ammonia water, unfltrd filterd, mg/L as N (00630)	Ammonia water, unfltrd filterd, mg/L as N (00605)	Phos- phorus, water, unfltrd	Total nitro- gen, water, unfltrd
OCT 23...	212	.33	243	3	.70	--	.30	.23	--	.070	.47	.06	.77		
MAR 25...	317	.46	341	11	.30	--	--	<.01	--	.160	--	.03	.46		
MAY 12...	319	.46	340	5	<.20	--	.01	.01	--	.130	--	.02	--		
AUG 18...	275	.48	353	<10	.27	.07	--	--	E.04n	--	.20	.05	--		
Date		Total nitro- gen, water, unfltrd		COD, high level, unfltrd water		E. coli, m-TEC MF, col/ 100 mL		Anti- mony, water, unfltrd		Barium, water, unfltrd recover		Beryll- ium, water, unfltrd recover		Boron, water, unfltrd recover	
		mg/L as NO <sub>3</sub> (71887)	mg/L (00340)	mg/L (31633)	mL (01095)	ug/L (01097)	ug/L (01000)	ug/L (01002)	ug/L (01005)	ug/L (01007)	ug/L (01010)	ug/L (01012)	ug/L (01020)	Boron, water, unfltrd recover	
OCT 23...	3.4	14	E2k	<1	<1	12	12	44.0	51.0	<1	<1	91	91		
MAR 25...	2.0	5	E20k	<1	<1	12	12	48.0	52.0	<1	<1	155	153		
MAY 12...	--	10	E1k	<1	<1	11	11	49.0	52.0	<1	<1	153	154		
AUG 18...	--	--	--	E.12n	E.1n	15.8	15	--	54	<.06	<.06	--	160		

**GILA RIVER BASIN**  
**09510000 VERDE RIVER BELOW BARTLETT DAM, AZ—CONTINUED**

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Cadmium water, filtrd, ug/L (01025)	Cadmium water, unfiltrd ug/L (01027)	Chrom- ium, water, unfiltrd ug/L (01030)	Copper, water, recover able, ug/L (01034)	Copper, water, unfiltrd ug/L (01040)	Iron, water, recover able, ug/L (01042)	Lead, water, unfiltrd ug/L (01045)	Mangan- ese, water, unfiltrd ug/L (01051)	Mercury water, filtrd, ug/L (71890)					
	OCT 23...	<.5	<.5	<1	<1	<2	<2	49	213	<2	<2	136	171	<.1
MAR 25...	<.5	<.5	<1	<1	<2	<2	<2	361	<2	<2	<2	6	35	<.1
MAY 12...	<.5	<.5	<1	<1	<2	<2	<2	169	<2	<2	<2	7	24	<.1
AUG 18...	<.04	<.04	--	<.8	.8	.9	--	--	<.08	.10	--	38	<.02	
Date	Mercury water, unfiltrd recover able, ug/L (71900)	Nickel, water, unfiltrd recover able, ug/L (01065)	Nickel, water, recover able, ug/L (01067)	Selen- ium, water, filtrd, ug/L (01145)	Selen- ium, water, unfiltrd ug/L (01147)	Silver, water, unfiltrd recover able, ug/L (01075)	Silver, water, unfiltrd recover able, ug/L (01077)	Stront- ium, water, unfiltrd recover able, ug/L (01077)	Thall- ium, water, filtrd, unfiltrd ug/L (01082)	Thall- ium, water, unfiltrd ug/L (01057)	Zinc, water, unfiltrd recover able, ug/L (01090)	Zinc, water, unfiltrd recover able, ug/L (01092)	Sus- pended sediment concen- tration mg/L (80154)	
	OCT 23...	<.1	<1	1	<1	<1	<1	<1	440	<2	<2	3	<2	6
MAR 25...	<.1	<1	2	<1	<1	<1	<1	660	<2	<2	<2	<2	<2	40
MAY 12...	<.1	<1	1	<1	<1	<1	<1	680	<2	<2	<2	<2	<2	46
AUG 18...	<.02	--	--	--	.7	--	--	--	--	--	--	E.4n	<2	5
Date	Sus- pended sediment dis- charge, tons/d (80155)													
OCT 23...	8.9													
MAR 25...	11													
MAY 12...	15													
AUG 18...	1.4													

Remark codes used in this table:

< -- Less than  
E -- Estimated value

Value qualifier codes used in this table:

c -- See laboratory comment  
k -- Counts outside acceptable range  
n -- Below the LRL and above the LT-MDL